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## Clinical Section

### Treatment of Pulmonary Sepsis

By

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*Physician, Central Tuberculosis Clinic*

*Winnipeg*

*Demonstrator in Medicine, University of Manitoba*

It is just during the last few years that attention has been paid to the prevention of pulmonary sepsis. Prevention, of course, implies a knowledge of cause, and this is where we fall short. In our opinion, most cases begin in childhood or early adult life and consequently preventive measures should be applied at this age.

#### PREVENTION

Early care of coughs and "colds" is of prime importance and especially care of the coryzas and bronchial infections accompanying the acute infectious fevers of childhood. Broncho-pneumonias, even of slight degree, are common with measles, scarlet fever, whooping cough, etc. Some children have cough for weeks following apparent recovery from one of these illnesses. The cough, however slight, is an indication that they have not recovered. The simple remedy of keeping these patients quietly in bed until the cough is gone would likely prevent a great deal of misery in later life. It is surprising how a cough will decrease in frequency day by day simply by the application of a little old fashioned rest and quietness.

These infections, however, are not the most important predisposing causes of pulmonary sepsis. In our experience, infections and slight irregularities of the nose and accessory sinuses are by far the most frequent offenders. In many cases, these nasal infections are only exhibited for the first time during an attack of whooping cough, measles, etc., but this is likely purely a coincidence. In children having frequent head "colds" or frequent chest "colds", look to the nose for a source of infection. It will frequently be found. Let us once more make a plea for more rest for these children who suffer from frequent "colds" and also for early and thorough inspection of the nose and accessory sinuses.

Another not rare finding in adults suffering from pulmonary sepsis of almost any degree is bad mouth conditions—carious teeth, spongy septic gums—pus exuding from about the teeth and constantly feeding infection to the bronchial tree. Is it any wonder that we find the organisms of Vincents Angina in a great number of these cases? While attacking the chest we should start at the same time a parallel attack on the mouth. We have seen cases of multiple lung abscess of the foulest description, the pus just teeming with these spirochetes, and no obvious cause for the abscesses except foul mouth conditions.

#### TREATMENT—MEDICAL

Both medical and surgical measures are used in the treatment of pulmonary sepsis, medical measures being used first, if possible, in all instances. With early cases, if treatment is persisted in, this should be sufficient. Medical treatment, then, comprises rest in bed to increase weight and general resistance. Quiet rest in bed is very important and cannot be emphasized too much, for, after all, these people are handicapped probably as much as the man with heart disease.

And now to empty out the diseased area of the lung, which, in many cases, is virtually a cesspool of pus. As is well known, the lower parts of the lung are most commonly affected. In order to empty this out, the lung should be inverted. That means that the whole trunk must be inverted. In this "posturizing", the patient can lie over the end of a table with hands on the floor and actually almost stand on his head. This promotes free drainage of the diseased area. Many patients discover for themselves the most suitable position for drainage. Posturizing is usually done two, three, or four times a day, from five to ten minutes at a time. While the patient is in this position he is encouraged to cough easily without strain. Inhalations are sometimes of value also—just ordinary steam which may be medicated or not, as one desires. This routine must be kept up for variable periods—of course, depending on the pathology present and the length of illness.

In young people, where the chest wall is still fairly pliable, if the trouble is fairly early, this routine is curative, even after a few weeks of treatment. In the old established cases, of course, where sputum is abundant, foul, and has been present for years, cure by this method is hopeless, but it is surprising how comfortable these people can become if they persist in keeping the chest empty and take ordinary proper care of themselves. It is noteworthy that when they are taken care of in an institution they all improve—for the simple reason that there is someone there to remind them to posturize and insist upon rest. A short time after going home they often revert to their former condition just through carelessness on their own part. Naturally, this form of treatment for most people is very tedious and they are hardly to be blamed for forgetting their exercises at times. Of course, another factor in keeping up infection is the frequent occurrence of the common "cold" to which all of us are exposed.

The problem of the patient with bronchiectasis is different. His bronchi are dilated and incapable of returning to normal. The alveolar tissue about the smaller bronchioles is very often diseased also. It is impossible to return this to a normal functioning state.



One should first try the routine outlined above with these unfortunate people, for some of them can become fairly comfortable and able to do their daily work, simply by posturizing and a little general care. This improves the general condition at any rate. With this class postural drainage is needed daily for the rest of their lives. However, it is well known how careless most patients are, and failures are very common.

#### TREATMENT—SURGICAL

Most surgical measures of curative value entail an extensive operative procedure. For this reason great patience must be exercised with palliative measures before turning to surgery for help. There are, however, certain definite indications for surgery, such as copious foul sputum causing the patient to be a social outcast, haemorrhage, or chronic ill-health due to repeated pneumonias or constitutional changes. On the other hand, radical surgery can only be attempted in cases where disease is unilateral or mostly so. At least, one must have enough good lung left to carry on the normal functions of life. For the patient with advanced bilateral disease the only hope is postural drainage, rest, and diet.

*Pneumothorax* is still used occasionally but it is of limited value. Pleural adhesions are usual in advanced cases, thus preventing its application. It has been our experience that pneumothorax, even if a good collapse is secured, is of little value in relieving symptoms, the thickened pus sacs which were bronchi refusing to collapse. Reports from other centres are not very encouraging.

*Oleothorax*, or the filling of the pleural cavity with sterile oil after inducing pneumothorax, has also been tried, but here also the results have been discouraging.

*Bronchial aspiration and lavage* by use of the Bronchoscope is advocated, but certainly is not curative. We have no experience here with this method. The bronchoscope should be used in all recent cases in children or adults, mainly as a diagnostic procedure to rule out foreign body and new growth. In old cases bronchoscopic drainage keeps the bronchi patent, thus paving the way for free drainage. In early cases cures are recorded. Cures are also reported, however, in early cases simply by posture and rest.

*Avulsion of the phrenic nerve* to paralyze the diaphragm has been used, but its usefulness is limited. In most centres it has been abandoned as being a dangerous procedure, the elevation of the diaphragm causing purulent secretions to become pent up in the lung and coughing is not so effective. It is still used as a pre or post-operative measure to the removal of a lobe to help to take up space in the thorax.

*Thoracoplasty* in selected cases seems to be of use. This is done by removing the whole length of the lower ribs and even going as high as the third and fourth. Leaving the first and second prevents collapse of the normal upper portion of the lung. Cures from this measure are infrequent

but most surgeons report improvement, such as great reduction in sputum, gain in weight, etc. Thoracoplasty also serves as a preliminary to other surgical procedures, such as the cautery or removal of a lobe.

*Incision and drainage* has been recommended but it is obvious that unless the disease is confined to a single bronchus this procedure would simply be a waste of time.

#### CAUTERY

Graham of St. Louis in 1923 recommended the use of the cautery. This "Cautery Pneumectomy", as it is called, is recommended for unilateral bronchiectasis, in which ordinary measures have failed and in which it is dangerous to remove the lobe surgically.

Briefly this is done by exposing a large enough area of parietal pleura through a reflected flap of chest wall after resection of portions of three or four ribs. One must make sure that the pleural surfaces are adherent. Then in short stages three to four weeks apart the diseased area is opened into with the hot cautery. In this way dilated bronchi are opened and drained, and diseased areas of lung are charred and slough away. When thorough drainage is established the area begins to fill in by granulation. Good results are reported by Graham in his series of 54 cases in 1929. Of this number 36 or 66.6% are still alive and at work, 34 or 63% are definitely improved, the remaining ranging from slight improvement to no change. There were 6 or 11% operative deaths. In Graham's series 17 or 47% of the living patients had small bronchial fistulae persisting but this is better than the bronchiectasis and they are usually not more than a lead pencil in size.

#### LOBECTOMY

Total surgical removal of the lobe or lung has been advocated by some surgeons for a number of years. Now, with the present refinement of X-ray diagnosis and surgical technique, this is becoming a safer operation. There are many slight differences in technique which are not important here but, briefly, the operation consists in making a large opening in the chest wall in line with the ribs. The lobe is freed of adhesions and, of course, collapses somewhat. Two tourniquets are applied to the root area, proximally and distally, and the lobe removed between them. The distal tourniquet is placed to prevent spilling of purulent sputum into an already irritated pleural cavity. The stump is closed over with sutures and pleura, and the thorax closed with closed drainage in place.

By some surgeons this is done in two stages, in order to fix the mediastinum and remaining lobe by the formation of adhesions following the first stage.

Bronchial fistulae are common here also but as mentioned before they are not as troublesome as the bronchiectasis and can frequently be closed later by grafts.

Bronchiectasis due to foreign body or new growth may be treated in the same way. There are several cases now reported of lobectomy for new growth. Bronchiectasis due to foreign body is obviously going to be well localized and, if conditions are suitable, surgery of some kind is the method of choice.

With tuberculous bronchiectasis the treatment is first that of the tuberculosis. Cavities can later be closed by whatever method seems suitable.

The mortality is steadily lowering, and though it is unfortunately not yet low, surgery offers a fair chance of relief to one with troublesome one-sided bronchiectasis. Since children bear the operation better than adults and since the life-long endurance of bronchiectasis is so miserable a prospect, even with the present mortality every well established fairly unilateral bronchiectasis in a child not improving should at least be considered for surgery.

#### ABSCESS

The treatment of lung abscess is a very controversial question. It seems to us that many will become cured by rest in bed, and posture. There is no doubt that if the abscess begins and continues to drain through a bronchus it will heal. The bronchoscope is of great use here in keeping the passageway clear for drainage. Here also the value of absolute rest and quiet cannot be over-emphasized. It is just as important as rest for tuberculosis.

These conservative measures should be tried first in all cases. Usually in six to eight weeks one can tell whether cure by conservative measures is possible. If the clinical course is not favorable surgical measures must be considered.

Pneumothorax is of value provided the infection about the abscess is not too near the pleural surface. In these cases the danger of a putrid empyema is great, and it is often fatal. In giving pneumothorax one should go very slowly because of the danger of choking off the internal drainage opening closing the neck of the bottle, and also of causing necrosis of lung tissue already heavily infected.

Incision and external drainage is really just the opposite to bronchial drainage. One must be sure of the location and also be sure there are pleural adhesions over the area where the abscess most nearly approaches the surface. A wide opening must be made and the abscess practically unroofed. Some use the hot cautery for this because it prevents bleeding and they think the incidence of brain abscess is less also.

Many putrid abscesses caused by anaerobic organisms are fatal, the danger being, a spread in the same lung or into the opposite one, causing a gangrenous broncho-pneumonia.

To sum up:

Prevention is better than cure. A little care of troublesome persistent coughs, especially in children and especially after the acute infectious fevers,

by rest in bed will prevent much lifelong misery.

In the treatment of all forms of pulmonary sepsis the building up of general bodily resistance is of great importance. This can be done usually by bodily rest and other measures but cannot be done without rest.

People suffering from pulmonary sepsis are all handicapped people and need to have life adjusted and energy expenditure measured for them as much as heart cases do.

Postural drainage several times a day is of great use in all sepsis of lungs and bronchi, but must be persevered in. It can cure in early cases and alleviate in all.

In bronchiectasis postural drainage is most important. Of lesser importance are pneumothorax, oleothorax, bronchoscopic aspiration, and phrenic avulsion.

In established bronchiectasis surgery should be considered, especially in children. The procedures of greatest value are the cautery and surgical removal of the diseased lobe.

No universal rules are possible for lung abscess, but rest is one of the most important elements in treatment, combined later, if necessary, with well planned surgical measures.

Briefly, in all septic conditions the best cure is prevention, the second best, the building up of resistance by rest and other care, and surgery being used when indicated.

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## Tuberculosis Epidemiology—Some Postulates

By

DAVID A. STEWART, M.D., M.A.,  
Hon. L.L.D. (Man.)

*Medical Superintendent Ninette Sanatorium*

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After all, the outstanding fact about tuberculosis is that it is an infectious disease. If there is even slight occasional contact, infection is likely: if contact is close, infection is inevitable: if prolonged, disease will likely follow infection sooner or later: and when disease is once established, then disability, crippling, scattering of infection and death are all in the offing.

Twenty-five years ago we had less to say than we have now about the infectiousness of tuberculosis, simply because we thought of everybody as inevitably infected anyway, and what could we do about so wide a spread? Since the sparks of infection would always fly, the only worthwhile protection was fire-proofed houses. And since the wind that bloweth where it listeth would always scatter evil seeds over the land, our best study was how to make the soil or soil culture resistant to them. Adverse conditions in life and living make a favorable soil for tuberculosis seed,



and favorable conditions of life and living help one who has been seeded with infection to resist the disease. So we sent the sick man to a Sanatorium to be cured by building up resistance to disease, tried to warn people against resistance-lowering ways of living, and to teach cleaner, saner, less wasteful living.

We still send the sick man to the Sanatorium, where we have supplemented resistance-raising routine by a good deal of surgery, and in all these years ways of life and living have gained many wholesomenesses and healthfulnesses, such as open windows and better choices in foods, that even the lean years have not altogether taken away. Soon a surprising thing began to dawn upon us. We had thought of infection as like fate itself, something we could do little or nothing about. But so many sick people have been segregated, and so many suspects and contacts examined, that we found infection was becoming noticeably less. Communities were becoming cleaner and safer. Deaths were fewer. Many children grew up without infection. Tuberculin tests showed fewer and fewer reactors.

Now when something was being done to control seed scattering, it was certainly a most important matter to push this as far as possible. A man infected some time in the past, and who became ill last year, is a tragedy that has happened. It has to be dealt with deliberately by the comparatively slow processes of cure. But a little family circle now, today, in contact with open disease and sure to be infected sooner or later is a tragedy like a child fallen into the water and about to drown. It is just happening. In another minute it will have happened. Something must be done this very second to prevent tragedy. Anti-tuberculosis effort must have not only the slower processes of cure, but also the swift processes of prevention and rescue.

Here is a sick man. The first question is, has he got tuberculosis? That is diagnosis. The second is, what can we do for him? That is treatment. The third, will he be helped or cured? That is prognosis. The next questions are, where did he get it? and, where did he scatter it? These are questions of epidemiology. And then, what can we do to prevent infection, and forestall disease, in the circle this man came out of? That is Public Health.

One prime essential is to cover the field, to follow up every clue with examinations and re-examinations, to bookkeep carefully year by year records of all known sources of infection and all people possibly infected. To find tuberculosis early there is one way only and that is to hunt for it among people who are not yet ill, but who have been in contact with open disease. If tuberculosis is left to bring itself to the doctor it will come late almost always, dead ripe, and after scattering much infection.

A Sanatorium considers that it exists to cure sick men; but it actually helps the state most by segregating sick men, by getting the spreader

away from the home circle. So those with the worst disease should be given preference, and even those who are pretty much hopeless accepted for treatment.

In most countries, provinces, states and communities, tuberculosis deaths and illnesses are getting fewer all the time. Deaths, and cures, and half-cures are things we can count, but it is not so easy to put into statistics the cleaning up of community infection, and the increase in general safety from tuberculosis menace. But that this clearing up, and this increase in safety, are going on remarkably and increasingly there is no doubt, and it is the most significant fact of the campaign.

When anti-tuberculosis effort began, say twenty-five years ago, fully half our present populations were already well started in life, and some of them beyond middle-age. They had been born into the more gross tuberculosis infections of that day, and grown up with them. But in this past quarter century immense amounts of infection have been cleared up at their sources. For even the older people this has meant a better understanding and care of the ills andcrippings they had dragged with them out of the past half century. It has meant a cleaner and more wholesome world to live in, grow old in, and die in. But for the children, the budding flowers that make their own spring-time wherever their glad faces appear, for the children of the new day it has meant much more than it could possibly mean for the still-lingering people of the old day. It has meant first of all a cleaner world to be born into; then a safer world to play in and grow up in, a cleaner, safer world to work and wed and have children in. Year by year we see the old surviving population we can do least for going, and the little people we can do most for coming and growing with the sunrise to dominate the day.

Thus year by year, in the very flow of the generations what is old passes away, and all things become new. And if we can do even a little to shape new worlds for new generations, what could an Angel Gabriel ask more? To heal a sick man of the generation before last is something. To keep him from spreading infection is much. But to make the world a cleaner birth-place for the children of yesterday, today and tomorrow is best and biggest of all.

And that is what anti-tuberculosis effort is doing, and doing increasingly. If a community has cut its death from tuberculosis to one-third what they were a generation or two ago then the average population, older and younger, is three times as safe from the tragedies of tuberculosis. But what safety is relatively less for the older elements and relatively greater for the younger elements. Applied to children born today it means a world not three times as safe from tuberculosis menace, but at least six times as safe. If a community has cut its deaths to one-fifth of what they were a generation or two ago, then this community is not five times as safe from tuberculosis menace for children born today, but at least ten times as safe.

Statistics are slippery, and all sorts of adjustments have to be made. Having made all I know how to make, I consider that among the people of white race in this province, when all considerations are in, tuberculosis deaths, in the twenty-five years since 1909, have been cut to one-fifth what they were. And for a child born today I think the tuberculosis menace is much less than one-fifth—is indeed about one-tenth of the tuberculosis menace to children born a quarter century ago. If that is not a worth-while change in community affairs I do not know what would be considered to be one.

## OBITUARY

Dr. J. T. Wright died of heart disease in Winnipeg on January 6th, in his 60th year. He was born at Metcalfe, Ontario, son of Rural Dean Wm. Wright and nephew of Archbishop de Penier, Vancouver. He graduated in medicine from Queen's University in 1900 and practiced in Manitou, Man., from 1904 till 1911 when he was appointed to the charge of the Government Hospital on Queen Charlotte Islands, B.C. In 1916 he went overseas as Medical Officer of the 184th Winnipeg Battalion and in France was attached to railway troops. On returning to Winnipeg he was appointed to the Pensions Board and was examining officer at Deer Lodge Military Hospital.

He is survived by a widow, two sisters and two brothers. He was a man of genial disposition and sterling integrity and possessed the confidence of his patients in a marked degree.

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In Memory  
of Our Late  
Sovereign  
George V.

Executive Meeting

Minutes of a meeting of the Winnipeg members of the Executive of the Manitoba Medical Association, held in the Medical Arts Club Rooms on Wednesday, January 22nd, 1936, at 12.30 noon.

Present.

Dr. F. G. McGuinness	Dr. D. C. Aikenhead
Dr. F. W. Jackson	Dr. W. G. Campbell
Dr. F. A. Benner	Dr. A. S. Kobrinsky
Dr. C. W. Burns	Dr. R. R. Swan
Dr. E. S. Moorhead	Dr. C. W. MacCharles
Dr. W. E. R. Coad	Dr. O. J. Day (Guest)

Re. Victorian Order of Nurses

Correspondence from the Winnipeg Medical Society in reference to the Victorian Order of Nurses was considered, and a letter was read from Mrs. C. D. Shepard, President, Winnipeg Board of the Victorian Order of Nurses as to instructions from the Victorian Order of Nurses issued to the nurses in reference to the holding of welfare clinics.

After considerable discussion, it was moved by Dr. C. W. MacCharles, seconded by Dr. W. E. R. Coad: That a copy of the letter received from Mrs. Shepard be forwarded on to the Winnipeg Medical Society for their consideration. —Carried.

Correspondence in reference to the Public Health nurses on the School Health services staff prescribing, was considered by the Committee; also, letter in connection with nurses taking throat swabs. Dr. Day discussed the matter from the attitude of the Pediatricians and pointed out that he thought our present system of medical services employed in schools in Winnipeg, should be given further consideration.

It was moved by Dr. A. S. Kobrinsky, seconded by Dr. C. W. MacCharles: That a Committee be named by the President to take on the duty of surveying the present medical services supplied in Winnipeg schools, and report back to the Executive. —Carried.

—Re. Programme for Annual Meeting.

The question of the Annual Meeting to be held in May, was then brought up and the Secretary suggested that the Post Graduate Committee of the Faculty of Medicine might be used in the preparation of the programme. It was felt, however, by the members of the Executive present that the Association itself should take on the whole duty of the preparation of the scientific programme, consulting the Post Graduate Committee of the Faculty of Medicine in order that there might be no overlapping between the two committees.

It was moved by Dr. D. C. Aikenhead, seconded by Dr. W. E. R. Coad: That Dr. C. W. Burns be convener of the Scientific Programme Committee with power to add, and that he arrange a tentative programme and report back to the Executive.

Dr. Burns then requested information as to the duration of the programme, and also as to the availability of obtaining outside speakers. The Secretary was instructed to write to Dr. Routley in reference to outside speakers, and the Committee as a whole thought that the same length of programme, as in previous years, be adopted this year.

The meeting then adjourned.

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### KING GEORGE'S PHYSICIANS

Sir Frederic Willans was in residence at Sandringham at the time that King George contracted his fatal illness. He was surgeon-apothecary to King George's Household at Sandringham. Sir Stanley Hewett, along with Lord Dawson of Penn, was called to Sandringham soon after the beginning of the illness. Sir Stanley Hewett was surgeon-apothecary to King George and is B. Chir., M.D., Cambridge. The Right Hon. Lord Dawson of Penn was Physician-in-Ordinary to King George. He attended the 98th annual meeting of the British Medical Association in Winnipeg in 1939 and was given an Hon. LL.D. by the University of Manitoba. He is President of the Royal College of Physicians, a member of the Medical Research Council and Physician to the London Hospital. He graduated from the University of London. Sir Maurice Cassidy a Physician-Extraordinary to King George, was called into consultation. Sir Maurice Cassidy is senior physician to St. Thomas Hospital. King George's last signature to a state document, that appointing a council of state, was witnessed by Lord Dawson in his capacity as a member of the Privy Council.

### PROFESSOR WILKIE

D. P. D. Wilkie, O.B.E., M.D., Ch.M. (Edin.), F.R.C.S. (Edin.), F.R.C.S. (Eng.), Professor of Surgery, University of Edinburgh, was created a Knight Bachelor in the New Year's Honour list. Sir D. P. D. Wilkie is now one of the authors of Thomson and Mile's Text Book of Surgery. He first described the obstructive type of appendicitis in 1910 and has written numerous articles on surgical subjects particularly relating to the biliary tract. He is a member of the Medical Research Council. Professor Wilkie's work is well known to many graduates of the University of Manitoba who have studied at Edinburgh.

### ONTARIO MEDICAL ASSOCIATION

The Annual Meeting of the Ontario Medical Association will be held in London, Ontario, on May 26-27-28-29. The program will be announced soon.

### WINNIPEG MEDICAL SOCIETY

The regular monthly meeting of the Winnipeg Medical Society was held in the Physiology Lecture Theatre of the Medical College on Friday, January 17th. G. W. Fletcher, M.D., Professor of Oto-Laryngology, read a paper on "Plastic Nose Repair." J. C. Hossack, M.D., read a paper on "Neurosyphilis." James McKenty, M.D., F.R.C.S. (C.) discussed "The Relations of the Profession to Hospitals." Copies of Dr. McKenty's paper are to be sent to the members of the Society and it is to be discussed at the next regular meeting.

### POST GRADUATE COURSES

The post graduate course on Gastro-enterology by members of the Faculty of Medicine has been well attended. Altogether 26 medical men registered for the course. These men came from western Ontario, Manitoba, and Saskatchewan. A post graduate course on Physiology for medical men in Winnipeg has now started. Up-to-date over thirty doctors have registered for this course. The program of this course is as follows: January 8—Address of Welcome and general introduction, A. T. Mathers, F.R.C.P. (C.), Dean of the Faculty and Professor V. H. K. Moorhouse; January 15 and 22—Cardiovascular System, J. M. McEachern, F.R.C.P. (C); January 29—Respiratory System, J. D. Adamson, M.R.C.P. (Edin.); February 5 and 12—Gastro-Intestinal System, F. A. L. Mathewson, M.D.; February 19—Blood and Blood Forming Organs, L. G. Bell, M.R.C.P. (Lond.); February 26—Kidney, L. G. Bell, M.R.C.P. (Lond.); March 4—Skin, W. G. Brock, M.D.; March 11—Sympathetic System, C. E. Corrigan, F.R.C.S. (Eng.); March 18 and 25—Nervous System, A. T. Mathers, F.R.C.P. (C); April 1—Liver and Pancreas, C. R. Gilmour, F.R.C.P. (C); April 8—Reproduction, F. G. McGuinness, B.A.O., F.R.C.S. (C); April 15—Bone, Bruce Chown, M.D.

# Department of Health and Public Welfare

## NEWS ITEMS

### SCARLET FEVER

During October of 1935 there was a sharp upturn in the reported cases of scarlet fever, carrying the figure well above our endemic index, and remaining so during November and December. Cases have occurred in all sections of the province, and up to the middle of January, 1936, there was no indication that the incidence was sinking to what might be considered a normal level.

So far as is known, the disease was generally of a mild character, only three deaths occurring among 815 cases up to the end of October, 1935; this fact probably has some bearing on the difficulties experienced in efforts to control the disease in some communities. The unrecognized and unreported cases make quarantine less effective than it should be, but it is unlikely that this explains wholly the failure to control the disease, for undoubtedly there are unrecognized carriers who account for continued outcropping of cases and keep the disease alive. The control of the disease by nose and throat culture is still in what might be termed the experimental stage, and as there is no relatively simple method of identifying the specific organism, the cost of the procedure would be prohibitive, and consequently, so far as cases are concerned, we must continue to rely largely on isolation for a minimum number of days, which seems compatible with the provision of safety for the community.

During the scarlet fever epidemic in Milwaukee 1934-1935 Koehler (1) reports 70 per cent. of cases had two cultures, negative for haemolytic streptococci after three weeks, and 85 per cent. after four weeks; also 1,142 cases released after three weeks showed 2.7 per cent. secondary cases, and 1,457 released after four weeks showed 1.3 per cent. secondary cases. After four weeks there are still virulent carriers, and Koehler reports that 229 cases released in 5 weeks had 3 per cent. secondary cases. This method of release from isolation after a set period of time leaves much to be desired, but at the moment is the only practical course open. Whether the minimum period is for twenty-eight days, or twenty-one days, as suggested by the recent report of the American Public Health Association on the Control of Communicable Diseases, no patient should be released if there is indication of complicating ear, nose, throat or abscess discharge.

The application of prompt and effective isolation and quarantine seems to yield more satisfactory results in rural districts than in large centres.

The handling of contacts varies with the communities involved and the attending circumstances when the case is treated at home. Sometimes susceptible contacts can well be placed under observation for seven days in a household where there are no susceptibles; the closing of school may be considered in rural districts where the school is the only centre of intercourse, but in cities this seems to be of little value. In the recent Milwaukee epidemic all children under the age of seven were quarantined in their homes under police supervision.

Although the mortality from the disease has for a long time been comparatively low, different outbreaks may assume unusual severity. The mortality rate in Manitoba in 1934 was .42 per 100,000 of the population, and the figures available so far for 1935 indicate that there will probably be little change, but in Milwaukee for 1934 (2) there were 24 deaths among 5,964 cases, or a mortality rate of about 3.3 per 100,000, and for the first six months of 1935 24 deaths occurred in 4,541 cases; in the State of Iowa for the

first ten months of 1935 there were 66 deaths, indicating an expected mortality of 3. per 100,000 of the population.

There are still being reported death rates over 20 per 100,000 of the population in some Central European countries. Is it possible that the disease may swing in a cycle of greater severity in this country?

At the present moment it is not the resultant mortality, but the complications which make scarlet fever a dangerous disease, although in recent years treatment with scarlet fever antitoxin may be lessening the possibility of their appearance. Taylor (3) reports that of 500 cases treated with antitoxin, 52 developed rhinitis and 15 had discharge severe enough to hold them in quarantine an average of 26 days past the normal time. Prior to the use of antitoxin, in a review of 290 cases, 60 developed rhinitis, 16 of the 500 developed otitis media, and of the 290 untreated cases 21 developed otitis media; mastoiditis in the first mentioned series occurred seven times, and in the second, 21 times; adenitis in 9 cases of the 500 and in 27 cases of the 290. Roseneau (4) states nephritis complicates 5 per cent. of cases, that it comes on about the third week and is just as likely to follow the mild as the severe form.

Judging by the number of enquiries received by the Department during the last couple of months from physicians, school boards and parents throughout the province there is a good deal of interest being taken regarding the possibility of conferring active immunity against the disease, and more material for this purpose has been issued during the past three months than for the whole of last year. During the immunization programme in Milwaukee, during which 6,000 children received the five doses of toxin, 5,700 of these were re-Dicked, and 93½ per cent. were found negative; during the preliminary Dick test 66 per cent. of those tested were found positive. The routine followed during this programme was as follows:

1. Every child was given a medical inspection before it was given the first dose of scarlet fever toxin. Children with chorea, rheumatism, heart disease, asthma, eczema and other allergic ailments were not immunized.

2. Every child had its temperature taken before each dose of toxin in order to exclude those who might be ill. At first a temperature of 99.6° was the maximum permissible, but this temperature was so common among the children that the maximum was soon raised to 100° F.

3. Whenever possible, all immunization work in schools was done in the afternoon. Some children immunized during the forenoon vomited during the afternoon and upset the entire classroom.

4. When immunization treatments were given in the morning the school nurse remained at the school during the afternoon.

5. A nurse and doctor were on duty in school on the day following immunization for the purpose of inspecting rashes and other signs of reactions.

6. Printed notices were given parents at the time of the first injection advising them of some of the reactions that might occur and assuring them that there would be no cause for alarm.

7. Every child absent from school following an immunization treatment was visited by the school nurse.

8. Since all children, no matter how severe the reactions, made a complete recovery, it was finally decided not to have the nurse follow up such cases in the homes. Whenever possible, school immunization clinics were conducted on a Friday afternoon to reduce school interference to a minimum.



The reactions resulting from scarlet fever immunization are more frequent than from the injections of diphtheria toxoid. In the Milwaukee experience the reactions were described as (1) severe systematic, 3 per cent., temperature 102, prostration, vomiting and diarrhoea. (2) Moderate systematic 15 per cent., lassitude, noticeable rise in temperature, some nausea and vomiting, rash and muscular pains. (3) Mild systematic 16 per cent., rash, slight rise in temperature. (4) Local reactions 23 per cent., redness and swelling of the arm and some local pain. (5) No reactions 43 per cent.

Of these 6,000 children only fourteen eventually developed scarlet fever, representing a morbidity rate of 2.3 per 1,000 children as compared to a rate of 60 per 1,000 of the unimmunized school children.

Other recent experiences also seem to indicate that better results can be anticipated from the active immunization than had been expected up to a short time ago, although up to the present time, in Manitoba, experience with scarlet fever immunization has not yielded as high a percentage of immunes after five doses as is indicated in the above mentioned references, and it is, therefore, still recommended that a Dick test be done after completing the five doses of toxin and if the reaction is positive further doses of the toxin be given.

Dick test material and scarlet fever toxin are distributed free through the Department of Health and Public Welfare.

—C. R. D.

- (1), (2) J. P. Koehler—Recent Experiences in Scarlet Fever Control. *Am. J. P.H.* Dec. 1935. 1359-1366.
- (3) Ellen F. Taylor—Scarlet Fever—*Can. Med. Assn. J.*, XXIII, 56-57, 1930.
- (4) M. J. Roseneau—*Preventive Medicine and Hygiene*, 6th Edition, P. 95.

## INFLUENZA

From January 1, 1935, to November 30, 1935, there were recorded fifty-eight deaths from influenza, and during that time there was no indication that there was anything in the nature of an epidemic in this province. So far as can be judged now, the influenza deaths for 1935 will be about the same as for 1934, but considerably less than for 1933, when they were 223. During part of December, 1935, and January, 1936, there has appeared a febrile condition widespread over the province which is being called the "grippe" and "influenza;" if this disease is considered to be influenza, very few cases are being reported, as up to date the Department of Health and Public Welfare has been notified of less than 100 cases. This is a reportable disease under the Provincial Board of Health Regulations and the Department would ask that all cases of influenza be reported to the medical officers of health.

### RECENT ADVANCES IN THE STUDY OF INFLUENZA

By

THOMAS FRANCIS, Jr., M.D.

*In the Journal of the American Medical Association*  
July 27, 1935.

The lack of sharp differential features has rendered it difficult to separate influenza as a well-defined clinical entity from many other mild infections of similar symptomatology that may invade a community. Thus the term "influenza" has been carelessly applied to various vague diseases of comparatively high morbidity which are associated with chills and generalized aches and pains and are of brief duration.

One may adopt, as requisites for the diagnosis of influenza, certain criteria such as sudden onset with constitutional symptoms, chilliness, fever, myalgia, headache, mild respiratory symptoms without coryza,

the presence of leukopenia, and a course of from two to three days followed by considerable asthenia and exhaustion. These may serve as a working basis but are insufficient to exclude other entirely different diseases that exhibit a similar clinical picture.

A comparable state of uncertainty has prevailed in regard to the causative agent of influenza. Many different bacteria have been implicated, particularly *Haemophilus influenzae* and *Bacterium pneumosintes* but in no case has the evidence been sufficiently convincing to permit of their acceptance as the specific causative factors. Certain scattered data have previously been presented which suggest that the etiologic agent belongs to that group of ultramicroscopic infectious agents called filtrable viruses.

In recent years, however, three different series of studies have been carried on which have again increased the interest in the etiology of influenza. These three series of investigations have been concerned with diseases involving the respiratory tract, which in each case has permitted of study of a disease occurring in its natural host.

The first of the series comprises the studies undertaken by Dochez, Shibley, Kneeland and Mills, and Long and his co-workers on the common cold. Briefly, the results of the investigation indicate that the common cold in man is produced by a filtrable virus which can also initiate a similar condition in the chimpanzee, and that the virus can be grown in artificial mediums and after cultivation still maintains the capacity to induce common colds in human individuals.

The second study, carried out by Laidlaw and Dunkin, was concerned with dog distemper, a highly infectious respiratory disease. These investigators, in addition to their work with dogs, the natural hosts, succeeded in transferring the disease to ferrets and were enabled thereby to study the disease experimentally in a stock known to be free from natural infection and maintained under conditions of rigid quarantine. They were able to establish the fact that this malady is caused by a filtrable virus.

The third set of investigations is that of Shope, relating to a respiratory disease of swine, which, so far as is known, first made its appearance at the time of the influenza pandemic of 1918-1919. This disease has been called swine influenza, or hog flu. It is characterized by fever, loss of appetite and weight, cough, respiratory distress and pulmonary consolidation, but it is of comparatively low mortality. Shope, in a series of brilliant studies, was able to demonstrate that the disease was produced and transmitted through contact infections by a filtrable virus in symbiosis with a bacterium of the group to which the human types of *Haemophilus influenzae* belong. The bacillus alone injected into the nose of a hog, except in rare instances, produced no effect; the filtrable virus alone produced a mild and, at times, unrecognizable infection but one which, nevertheless, was followed by a firm immunity against infection by the two agents combined. Furthermore, it was possible, by the subcutaneous injection of the filtrable agent into swine, to induce a state of immunity that protected against infection when the virus and influenza bacillus were injected together into the nose of the hog.

Studies such as these have served to heighten the probability that similar conditions may obtain in other epidemic respiratory infections, especially those of man.

In 1933 Smith, Andrews and Laidlaw instilled into the noses of ferrets filtered nasopharyngeal washings obtained from human patients during the acute stage of influenza. Two days after inoculation the ferrets became ill with fever, apathy, loss of appetite and nasal catarrh. The ferrets were killed on the third or fourth day after the onset of fever, and, with emulsions of the nasal turbinate bones of such animals, these investigators were able to transmit the disease to other ferrets. The only pathologic change that they found in the infected animals was inflammation

of the nasal mucous membranes. Ferrets that recovered from the disease were found to be immune to reinfection. The serum of these recovered animals contained anti-bodies that were capable of neutralizing the action of the infective agent when the serum and infectious material were mixed and then inoculated into a susceptible ferret. Similar antibodies were detected in the serum of men convalescent from influenza and in the serum of other human individuals as well. The active agent was found to be a filtrable virus, and the addition of various bacteria caused no definite difference in the experimental disease.

In addition, the British workers were able to transmit the virus of swine influenza to ferrets, producing a disease indistinguishable from that caused by the human strain of virus. Shope was able to confirm their observations regarding swine influenza in ferrets. Furthermore, he found that, when suspension of finely ground lung of infected hogs or bacteria-free filtrates of such suspensions were injected intranasally into anaesthetized ferrets, there developed, in addition to the inflammation of the nasal mucous membranes, involvement of the lung itself. The pulmonary involvement was of lobar distribution, firm and markedly edematous. The alveolar walls were thickened with many mononuclear and polymorphonuclear cells, while in the alveolar spaces the exudate was sparse and composed primarily of mononuclear cells. After repeated passages in ferrets the virus still retained its infectivity for swine, producing characteristic swine influenza bacilli, while in the experimental disease in ferrets no bacterial component was required. The serum of recovered swine or ferrets was found to be capable of inhibiting the activity of the virus.

With the results of these studies as a background, during the winter of 1933-1934 I inoculated material from various human respiratory infections into the nasal passages of ferrets, but, with the exception of one instance of definite bacterial origin, I was unable to establish any disease in the animals.

In the early autumn of 1934, however, a widespread epidemic of influenza occurred in Puerto Rico. Through the kindness of physicians of the International Health Board, sputum was obtained from patients during this epidemic. The sputum was placed in sealed bottles of 50 per cent. glycerin, packed in a vacuum jug with ice and shipped to New York by air mail. The materials were received from three to five days after collection. The sputum was washed free from glycerin and emulsified with Lock's solution; the emulsions were inoculated into the nasal passages of ferrets lightly anesthetized with ether. On the second day after inoculation, fever developed in all the animals. Three days later one of these was killed and the lungs and turbinates were removed and ground in a mortar with sand and meat infusion broth. Part of the material was centrifugated and filtered through a Berkefeld V filter. Two ferrets were given the unfiltered suspension intranasally; another was given the bacteria-free filtrate by the same route. All three animals were taken sick, and with the virus recovered from these animals it has been possible to transfer the disease in serial passages from ferret to ferret by means of suspensions of filtrates of either ground lung or turbinate.

In the first few passages of the virus through ferrets the disease is characterized by a diphasic type of fever and mild apathy, but little else. After a few passages, however, in the lungs of ferrets that are killed on the fourth or fifth day, bluish consolidation of the lower lobes is usually noted, and subsequently similar involvement of the lungs has almost always occurred after intranasal infection. In animals with pulmonary involvement the disease is more severe. Their respirations are rapid, somewhat jerky and labored, and at times moaning in character. A short dry cough may be noted. There may be a watery nasal and conjunctival discharge. The animals, usually alert and active, are apathetic and lie quiet in their cages, eating little. After from five to six days, recovery begins

and the animal rapidly regains an apparently normal interest in food and in its surroundings. Recovery is almost invariably the rule.

On the fourth day after the original material was obtained from Puerto Rico, one of the laboratory assistants was taken sick, and two days later another assistant was also taken sick, both with symptoms typical of influenza. The throat washings obtained from these two patients at the height of the disease were inoculated into ferrets, and a characteristic experimental disease was produced. These observations indicate the infectiousness of the material for man, since influenza was not known to be prevalent in the community at that time.

The disease in mice, after intranasal infection, is primarily one of the respiratory tract and essentially of the lungs. The rapidity of the course of the disease depends, to a certain extent, on the concentration of the infectious agent in the inoculum. After the intranasal instillation of a 5 per cent. suspension of lung tissue, the mice begin to sicken on the second or third day; they are quieter, their coats become ruffed, and they huddle together and eat but little. The respirations become exaggerated, labored and audible, the eyes become wet and staring, and the animal dies in from four to eight days.

At autopsy, the lungs are almost completely involved. They are distended and a reddish blue; the surfaces are smooth and glistening, and when the lungs are removed from the body considerable froth exudes from the trachea. In the earlier stages, the involvement is most marked in the dorsal aspects of the upper lobes and about the roots of the lobes. It has been possible to carry the disease through many transfers in mice, with only an occasional survivor. From the lungs of the mice one can in turn infect the ferret, producing a characteristic illness.

While these studies were in progress, Andrews, Laidlaw and Smith reported independently that they had been successful in establishing the human and swine influenza viruses in mice with a resulting pathologic picture similar to that which we have described.

The results of filtration and cultural studies indicate that the infective agent of epidemic influenza is a filtrable virus. The infection has not been transmitted readily by contact from infected to normal animals or by other routes than the respiratory tract.

We have succeeded in recovering a similar infectious agent from the nasal washings of patients during the recent mild epidemics of influenza in New York and Philadelphia. The studies with these strains have not been carried out extensively as yet, but the course of the experimental disease in ferrets and mice is much the same. The blood of patients suffering from influenza, in spite of the generalized symptoms, has not been found to infect the mouse or the ferret, nor has it been possible with the throat washings of patients to transfer the infection directly to mice.

Also on the subject of influenza Francis reports in the *Journal of Experimental Medicine*, October 1, 1935, in part as follows:

"A state of immunity as measured by circulating antibodies and active resistance follows recovery from infection with the virus of influenza. That the mere presence of neutralizing antibodies in the circulating blood may not necessarily assure a complete refractory state to reinfection is recognized. Ferrets which have developed neutralizing antibodies following experimental or presumably direct infection exhibit little or no reaction to reinfection. In certain instances, however, reinoculation may elicit a brief febrile reaction without other evidence of infection. Attempts to recover virus from these animals indicate that although the immunity acquired as a result of infection may not be sufficiently absolute to prevent febrile reactions on reinfection, the virus is quickly neutralized and from these animals is not so readily recoverable as it is from normal animals infected for the first time.



If a similar set of circumstances prevails in the natural disease in man, the experimental results suggest a possible explanation for the lack of uniform success in attempts to recover virus from all patients with influenza.

Virus neutralization tests with serum of influenza patients taken during the acute stage of the disease, during early convalescence and at later periods, have shown that the serum of the individual at the height of the disease fails to neutralize the influenza virus, whereas serum taken from the same patient during convalescence does contain specific antibodies. These antibodies are not evanescent, but persist for several months at least, as evidence by the neutralizing capacity of serum obtained from patients 6-8 months after recovery from influenza.

Similar studies with the serum of patients ill with, and recovering from, pneumococcus pneumonia, have shown that in general specific antibodies neutralizing the influenza virus do not develop in response to pneumococcus infection. Studies of the antibody content of the serum of human individuals before, during and after a common cold were made. The results indicate that this type of respiratory infection does not stimulate the formation of antibodies against the virus of influenza. It appears, therefore, that the neutralizing action of the serum of human individuals is a specific response to infection with the influenza virus."

## COMMUNICABLE DISEASES REPORTED

### Urban and Rural - December, 1935

Occurring in the Municipalities of:—

**Mumps:** Total 427—Winnipeg 179, St. Boniface 56, Gretna Village 51, St. Paul East 29, Kildonan East 17, St. James 12, Unorganized 12, Kildonan West 9, Eriksdale 5, Rosser 3, Norfolk North 3, Kildonan North 2, Fort Garry 2, St. Andrews 2, Transcona 2, Arthur 1, Assiniboia 1, Brandon 1, Dauphin Town 1, De Salaberry 1, Minto 1, St. Clements 1, (Late reported—November—St. Boniface 32, Kildonan West 3, Carberry 1).

**Measles:** Total 424—Winnipeg 266, St. Boniface 20, Kildonan East 18, St. Vital 14, St. James 11, Macdonald 11, Flin Flon 9, Glenwood 9, Fort Garry 8, Archie 7, Westbourne 7, Stonewall 6, Woodlands 5, Transcona 4, Assiniboia 3, Norfolk South 3, St. Andrews 3, Brandon 2, Edward 2, Melita 2, Norfolk North 2, Portage City 2, Springfield 2, Bifrost 1, Kildonan West 1, Rockwood 1, St. Clements 1, St. Paul East 1, Thompson 1, Unorganized 1, White-mouth 1.

**Chickenpox:** Total 319—Winnipeg 179, Brandon 32, Teulon 20, Miniota 13, Woodlands 12, Flin Flon 10, St. James 8, Kildonan East 6, St. Boniface 5, Swan River Town 4, Neepawa 3, Portage City 3, Silver Creek 2, St. Vital 2, Hamiota Rural 1, Kildonan North 1, Sifton 1, Transcona 1, Turtle Mountain 1, Wallace 1, Westbourne 1, Whitehead 1, (Late reported—November—Miniota 9, St. Boniface 3).

**Scarlet Fever:** Total 206—Winnipeg 74, Minitonas 10, Flin Flon 9, Roland Rural 9, St. Clements 9, Brandon 8, Unorganized 6, Grey 5, Kildonan East 5, Kildonan West 5, Roblin Rural 5, Louise 4, Pembina 4, Birtle Rural 3, Birtle Town 3, Ellice 3, Gretna Village 3, Lac du Bonnet 3, Norfolk North 3, Rhineland 3, St. Boniface 3, Daly 2, Manitou 2, Norfolk South 2, Portage City 2, Strathclair 2, St. Vital 2, Bifrost 1, Brenda 1, Cornwallis 1, Foxwarren Village 1, Harrison 1, Kildonan North 1, Morden 1, Neepawa 1, Rapid City 1, Rockwood 1, Rosedale 1, Rosser 1, Russell Town 1, Silver Creek 1, Stanley 1, Victoria 1, (Late reported—November—St. Boniface 1).

**Whooping Cough:** Total 96—Woodlands 24, Winnipeg 19, Brandon 15, St. James 10, Unorganized 7, Flin Flon 4, Sifton 3, St. Boniface 2, Fort Garry 1, Kil-

donan West 1, Stonewall 1, (Late reported—October—Ethelbert 1, Lorne 1,—November—Ethelbert 1, Lorne 2, Richot 1, St. Boniface 3).

**Tuberculosis:** Total 29—Winnipeg 11, Unorganized 4, Fort Garry 2, St. James 2, Cartier 1, Ellice 1, Flin Flon 1, Franklin 1, Hanover 1, Norfolk North 1, Pembina 1, Portage City 1, St. Laurent 1, Thompson 1.

**Diphtheria:** Total 20—Winnipeg 9, La Broquerie 3, Roland Rural 2, St. Boniface 2, Unorganized 2, Charleswood 1, The Pas 1.

**Erysipelas:** Total 16—Winnipeg 5, Brooklands 1, Dufferin 1, Hanover 1, Kildonan West 1, Rhineland 1, Stanley 1, St. Boniface 1, Transcona 1, Unorganized 1, (Late reported—November—Stanley 1, Winchester 1).

**German Measles:** Total 14—Unorganized 5, Stonewall 3, Macdonald 2, Edward 2, Dauphin Town 1, (Late reported—November—St. Boniface 1).

**Influenza:** Total 9—Winnipeg 1, (Late reported—October—Mossey River 2, Cameron 1, St. Boniface 1,—November—Eriksdale 1, Franklin 1, Roland 1, Unorganized 1).

**Typhoid Fever:** Total 5—Brandon 2, Boulton 1, Oakland 1, (Late reported—November—Eriksdale 1).

**Diphtheria Carriers:** Total 2—St. Laurent 1, Unorganized 1.

**Trachoma:** Total 1—Morris Rural 1.

**Lethargic Encephalitis:** Total 1—(Late reported—November—Unorganized 1).

**Anterior Poliomyelitis:** Total 1—(Late reported—October—Minitonas 1).

**Cerebrospinal Meningitis:** Total 1—St. Clements 1.

**Venereal Disease:** Total 133 — Gonorrhoea 101, Syphilis 32.

## DEATHS FROM ALL CAUSES IN MANITOBA

### For the Month of November, 1935.

**URBAN**—Cancer 40, Pneumonia 27, Tuberculosis 10, Influenza 5, Syphilis 5, Puerperal 2, Whooping Cough 2, Scarlet Fever 1, all others under 1 year 5, all other causes 152, Stillbirths 11. Total 260.

**RURAL**—Cancer 28, Pneumonia 17, Tuberculosis 17, Whooping Cough 4, Influenza 3, Erysipelas 2, Puerperal 1, Mumps 1, all others under 1 year 1, all other causes 134, Stillbirths 16. Total 224.

**INDIAN**—Tuberculosis 7, Pneumonia 2, Measles 1, Cancer 1, Syphilis 1, all other causes 14. Total 26.

## NOTICE TO MANITOBA PHYSICIANS

The Department of Health and Public Welfare will probably have some scholarships available for a course in Public Health leading to the diploma of health, University of Toronto, through the generosity of the Connaught Laboratories, and are prepared to receive for consideration applications from practicing physicians in Manitoba. Preference will be given to those doing health officer work, particularly municipal physicians.

Further information can be obtained by writing direct to the Deputy Minister of the Department of Health and Public Welfare.



## Medical Library University of Manitoba

A summary of the contents of some of the journals available for practitioners, submitted by the Faculty of Medicine of the University of Manitoba. Compiled by T. E. HOLLAND, B.Sc., M.D. (Man.), F.R.C.S. (Edin.).

### "The Practitioner"—December, 1935.

This number contains a symposium on Diseases of the Thyroid gland as well as a number of other articles.

"Diseases of the Thyroid" — by Sir Humphry Rolleston, Bart., Acting Pres. British Medical Association.

"The Medical Treatment of Toxic Goitre"—by F. R. Fraser, M.D., F.R.C.P., Professor of Medicine, University of London.

"The Surgical Treatment of Toxic Goitre"—by Geoffrey Keynes, M.D., F.R.C.S., Assistant Surgeon, St. Bartholomew's Hospital.

"Myxoedema"—by O. L. V. de Wesselon, M.D., F.R.C.P., Professor of Medicine, University of London.

"Diseases of the Thyroid Gland in Children"—by E. A. Cockayne, M.D., F.R.C.P., Physician, Middlesex Hospital and the Hospital for Sick Children, Great Ormond St.

"The Basal Metabolic Rate: Its Meaning and Interpretations"—by J. Douglas Robertson, M.D., Clinical Chemical Pathologist to the Middlesex Hospital.

"On Some Minor Digestive Errors"—by Joseph Geoghegan, M.D., F.R.C.S.E., Phys. to Out-Patients, Royal Hospital, Richmond.

"Some Observations on Artificial Pneumothorax"—by Bernard Hudson, M.A., M.D., M.R.C.P., Medical Superintendent—The Victoria, British Sanatorium, Davos, Switzerland.

"The Journal of the American Medical Association"  
December 21st, 1935.

"Intermittent Pressure and Suction in the Treatment of Chronic Occlusive Arterial Disease"—by Edgar V. Allen, M.D., and George E. Brown, M.D., Rochester, Minn.

"Ether-Oil Analgesia in Obstetrics—Modified Technique"—by James T. Gwathmey, M.D., New York, and C. O. McCormick, M.D., Indianapolis.

"Vinyl-Ether Obstetric Anaesthesia for General Practice"—by Wesley Bourne, M.D., F.R.C.P. (Can.) Montreal.

These papers were read before the Section on Obstetrics, Gynaecology and Abdominal Surgery at the meeting of the American Medical Association, June 1935. A discussion of the papers is included.

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**"The Clinical Journal"—December, 1935**

"Acute Laryngeal Obstruction"—by Edward D. D. Davis, F.R.C.S., Surgeon, Ear, Nose and Throat Department, Charing Cross Hospital.

"Sterility in Women"—by A. C. Palmer, F.R.C.S., Gynaecological and Obstetrical Surgeon, King's College Hospital.

"Flat and Painful Feet"—by R. Broomhead, Hon. Surgeon, Orthopaedic Dept., General Infirmary, Leeds.

"The Causes and Treatment of Anaemia"—by Charles Seward, M.D., F.R.C.P., Hon. Ass't. Phys., Royal Devon and Exeter Hospital.

"Mesenteric Cyst (?) Mullerian Duct Origin in the Male"—by G. H. Edington, D.Sc., F.R.C.S., Hon. Consulting Surgeon, Western Infirmary, Glasgow.

"Torsion of the Fallopian Tube"—by K. F. D. Waters, B.A., B.M., B.Ch., F.R.C.S.E.

**"The American Journal of Surgery"**  
—November, 1935.

This issue contains a symposium on Present-Day Treatment of Cancer of the Oro-Pharynx. The following articles discuss the disease and its treatment in the various parts of the oropharynx. The articles are extremely well illustrated by diagrams and photographs showing procedure in operative and radiation therapy.

"Metastatic Epidermoid Carcinoma in the Neck"—Technical Considerations in the Combined method of Treatment"—by Douglas Quick, M.B. (Tor.), F.A.C.S., New York City.

"Treatment of Cancer of the Lip"—by Hayes E. Martin, M.D., Attending Surgeon, Memorial Hospital, New York City.

"Radiation Therapy of Malignancy of Tongue"—by Ira A. Kaplan, B.Sc., M.D., Director, New York City Cancer Institute.

"Surgical Aspects of the Treatment of Carcinoma of the Tongue"—by Edward M. Livingstone, M.D., and Hyman Lieber, M.D., New York City.

"Cancer of the Cheek & Neighboring Bone"—by Vilray P. Blair, M.D., F.A.C.S., James Bennett Brown, M.D., F.A.C.S., and Louis T. Byars, M.C., St. Louis, Mo.

"Practical Management of Malignancy of the Tonsil"—by Carl Effers, M.D., F.A.C.S., New York City.

"Radiotherapy of Cancer of the Larynx"—by Maurice Lenz, M.D., New York City.

The following articles in the same number are also of interest.

"The Jaundiced Patient"—by Isidore Cohn, M.D., F.A.C.S., Tulane University.

"Complete Anuria in Perforated Gastric Lesions": Report of Two Cases—by Abraham D. Segal, M.D., and J. Sturdevant Read, M.D., Dept. of Urology, Coney Island Hospital, Brooklyn, N.Y.

"Spinal Anaesthesia"—by Justin J. Stein and Ralph M. Tovell, The Mayo Clinic.

**"The Journal of the American Medical Association"**  
—November 2, 1935.

"The Etiology of Heart Disease": With Special Reference to the Present Status of the Prevention of Heart Disease — by Howard E. Sprague, M.D., and Paul D. White, M.D. Boston.

"An Analysis of the Apparent Increase in the Heart Diseases"—by Alfred E. Cohn, M.D. New York.

"The Heart in Hypertension"—by George Fahnestock, M.D., Minneapolis.

"The Rehabilitation and Placement in Industry of those handicapped with Cardio-vascular Disease"—by William D. Stroud, M.D.

"A Critical Analysis of Heart Disease Mortality"—by O. F. Hedley, M.D., Philadelphia.

—The above papers on Heart Disease were read at the Annual Meeting of the American Medical Association, June, 1935. An abstract of the discussion which followed is also included in this number of the Journal.

A summary of the contents of some of the journals available for practitioners, submitted by the Faculty of Medicine of the University of Manitoba. Compiled by T. E. HOLLAND, B.Sc. M.D. (Man.), F.R.C.S. (Edin.).

**"The Canadian Medical Association Journal"**  
—November, 1935.

"The Importance of Rest and Liver Therapy in the Treatment of Subacute Combined Degeneration of the Cord"—by R. F. Farquharson, M.B., F.R.C.P. (C), Toronto.

—Spinal Cord lesions in Pernicious Anaemia are completely arrested by administration of potent liver extracts, preferably intramuscularly.

"Blood Dyscrasias Amenable to Treatment by Splenectomy"—by Edward S. Mills, Montreal.

"Splenectomy: Operative Procedure and After Care"—by A. T. Bazin, Montreal.

—The above two papers formed part of a Symposium at Atlantic City on "Anomalies of Blood Formation in relation to the Role of the Spleen."

"The Relief of Pain During Labour"—by Leighton C. Conn, F.R.C.S. (C), and John Ross Vant, M.C.O.G.

—From the Department of Obstetrics and Gynaecology, University of Alberta, Edmonton.

"The Usefulness of Anaesthetic Agents"—by John S. Lundy, M.D.

—Section on Anaesthesia, The Mayo Clinic, Rochester, Minn.

"What about Tonsils?"—by S. B. MacMillan, F.R.C.S. (Edin.), The Lockwood Clinic, Toronto.

**"Annals of Internal Medicine"—April, 1935.**

"The Influence of Dietetic and other Factors on the Swelling of Tissues in Arthritis"—Preliminary Report by C. W. Scull, Ph.D., and Ralph Pemberton, M.D., F.A.C.P., Philadelphia.